IN THE SPECIFICATION

Please replace the paragraph at page 23, line 25, with the following rewritten paragraph:

In the above, an elastic wave pulse is generated and propagates in the rod by a shock imparted by impacting a projectile on the end surface of the rod that is adequately long compared with its diameter. At the time the elastic wave pulse reaches the end surface and reflects, the end surface of the rod moves at the following acceleration that is twice the product of the propagation velocity (C) of the longitudinal elastic wave and the strain rate ~~[Formula 1]~~ $\dot{\varepsilon}(t)$ of the incident elastic wave pulse.

Please replace the line at page 24, line 3, as follows:

~~[Formula 2]~~ $a(t) = 2C\dot{\varepsilon}(t)$

Please replace the line at page 24, line 10, as follows:

~~[Formula 3]~~ $a(t) = 2C\sum_{n=1}^{N}\dot{\varepsilon}_n(t)$

Please replace the line at page 25, line 1, as follows:

~~[Formula 4]~~ $\varepsilon(z,t) = F(z,t)$

Please replace the line at page 25, line 7, as follows:

~~[Formula 5]~~ $F(z,t) = \varepsilon_t(t,z) - \varepsilon_t(t - \frac{21_p}{C_p}, z)$

Please replace the line at page 25, line 16, as follows:

~~[Formula 6]~~ $\varepsilon_t(t,z) = \frac{V_1}{\pi C}\left[\int_0^{\infty}\frac{\sin(a_1\eta + \eta^3/3)}{\eta}d\eta + \int_0^{\infty}\frac{\sin(a_2\eta + \eta^3/3)}{\eta}d\eta\right]$

Please replace the line at page 25, line 19, as follows:

~~[Formula 7]~~ $a_1 = \frac{Z - C_a t}{\left[\frac{3}{16}v^2 D_a^2 Ct\right]^{1/3}}$

Please replace the line at page 25, line 21, as follows:

~~[Formula 8]~~ $a_2 = \frac{-Z - C_a t}{\left[\frac{3}{16}v^2 D_a^2 Ct\right]^{1/3}}$

Please replace the line at page 26, line 16, as follows:

~~[Formula 9]~~ $\varepsilon_n^e(t) = L^{-1}\left[L[\varepsilon_{Ln}(t)]\frac{L\left[F(L_1, t - \frac{(L_n - L_1)}{C})\right]}{L[F(L_n,t)]}\right]$

Please replace the paragraph at page 26, line 20, with the following new paragraph:

Here, ~~[Formula 10]~~ L and L^{-1} are a Laplace operator and an inverse Laplace operator. Therefore, elastic wave pulse strain $\varepsilon_r(L_1,t)$ at the representative location can be expressed by the following equation.

Please replace the line at page 26, line 24, as follows:

~~[Formula 11]~~ $\varepsilon_r(L_1,t)=\frac{1}{N}\left[\varepsilon_{L1}(L_1,t)+\sum_{n=2}^{N}\varepsilon_n^e(t)\right]$

Please replace the line at page 27, line 13, as follows:

~~[Formula 12]~~ $a(t)=2C\dot{\varepsilon}_r(L_1,t-\frac{L-L_1}{C})$

Please replace the line at page 25, line 21, as follows:

~~[Formula 13]~~ $\frac{L[a_{out}(t)]}{2Cj\omega L\left[\varepsilon_r(L_1,t-\frac{L-L_1}{C})\right]}$

Please replace the paragraph at page 27, line 25, with the following new paragraph:

Also, based on elastic wave theory, when strain gauge output is error-corrected, with respect to the strain gauge output signal at the representative location obtained by the above Equation (9), Equation (3) is applied to obtain the strain ~~[Formula 14]~~ $\varepsilon_{riT}(t)$ of the elastic wave pulse incident on the end surface where the acceleration sensor is attached. For this, the following equation is used.

Please replace the line at page 28, line 5, as follows:

~~[Formula 15]~~ $\frac{L[\varepsilon_{riT}(t)]}{L[\varepsilon_r(t)]}=\frac{L[F(L,t)]}{L[F(L_1,t)]}$

Please replace the line at page 28, line 13, as follows:

~~[Formula 16]~~ $$\frac{L[a_{out}(t)]}{2Cj\omega L[\varepsilon_{riT}(t)]}$$

Please replace the line at page 25, line 21, as follows:

~~[Formula 17]~~ $$\frac{L[a_{out}(t)]}{L\{\frac{dv_{iL}(t)}{dt}} = \frac{L[a_{out}(t)]}{j\omega L[v_{iL}(t)]}$$

Please replace the line at page 29, line 5, as follows:

~~[Formula 18]~~ $v_L(t) = 2C\varepsilon_{iL}(t)$

Please replace the line at page 29, line 15, as follows:

~~[Formula 19]~~ $$G_{CL}(j\omega) = \frac{L\left[\varepsilon_r(L_1, t - \frac{L - L_1}{C})\right]}{L[\varepsilon_{iL}(t)]}$$